Appendix D: Traditional Tribal Lifeways Background Information

Members of the Yerington Paiute Tribe (YPT) live near the Site (the YPT reservation is 2.5 miles to the north, and the Colony is located 0.5 miles to the east next to the City of Yerington), and the Walker River Paiute Tribe is located in the area of Schurz, Nevada. An important part of the human health risk assessment (HHRA) is to address potential types of exposure to tribal members practicing traditional lifeways that are different from other off-Site receptors. This CSM appendix describes traditional tribal lifeways based largely on interviews with Paiute Tribes and research conducted in the 1930s and 1940s by Willard Z. Parks (Fowler 1989), Percy Train (Train, et al., 1974) and Margaret Wheat (Wheat, 1967; Fowler, 1990). The other source of information about Paiute tribal life used for this appendix comes from research and interviews conducted by Michael Hittman in the 1980's (Hittman 1990). This information is: 1) focused on the plants and animals that a practitioner of traditional tribal lifeways could use for food, medicine, materials for clothing, tools and housing or other cultural uses; and 2) serves as a framework for how a practitioner of traditional tribal lifeways could potentially come into contact with mine-related chemicals in these plants, animals or other media as described in Section 3.5 of the CSM. The information provided in this appendix is based on published records of historical practices.

1.0 Environment

The plants and animals historically available to the Paiute Indians, and support most aspects of their lifeways, are controlled by the environment in the Great Basin. The Great Basin is a portion of the basin-and-range physiographic province, and is composed of uplifted mountain blocks and down-dropped basins. The Great Basin is located in the rain shadow of the Sierra Nevada, resulting in average annual rainfall amounts of less than 5 inches on the valley floors and up to 15 inches on the intervening ranges (Fowler 1989). The limited precipitation (rain or snow) that falls in the Great Basin ultimately either evaporates or infiltrates into the ground, and the rivers and lakes within this environment have no outlet to the sea. Precipitation and snowmelt in the Sierra Nevada provides surface water flows to portions of the area (e.g., the Walker Rivers) within the Great Basin and end in terminal lakes (e.g., Walker Lake), which are typically more

saline then most fresh water lakes. Spring flows from the mountains also support local wetlands. Many of the valley floors within the Great Basin are occupied by playas.
The Truckee and Carson River basins occur to the north of the Walker River watershed. The Truckee River ends in Pyramid Lake, and the Carson River ends in Carson Lake and the Stillwater wetlands, the latter comprising Nevada's largest wetland, attracts many migratory water fowl. Major fish species in Pyramid Lake include the Cui-ui (a large black fish of the sucker family that only lives in Pyramid Lake), the Tui chub and the Lahontan cutthroat trout. Walker Lake supports many fish, such as the Walker Trout.

Cottonwood and birch trees, and various species of willows occur along the rivers (Fowler 1989). Marsh plants occur where the streams are slow including various bulrushes, cattails and rushes. The majority of the area is arid sagebrush-steppe vegetative community that is dominated by sagebrush and other low-lying woody vegetation, interspersed with a variety of forbs (non-grass broadleaf plants) and grasses. Higher on the mountain slopes, a cooler habitat with more rainfall, the major trees include junipers and pinyon. These areas provide habitat for terrestrial wildlife such as sage grouse, marmot, pika ('little-chief-rabbit') and deer (Wheat, 1967).

This area is home to more than 40 species of mammals including mule deer and pronghorn antelope that use a variety of the grasses, forbs, shrubs and woody plants of the sagebrush-steppe habitat. Herbivores, including pocket gophers, rabbits, and voles, are primary consumers of a variety of above and below-ground plant stems, roots, leaves, and seeds. Insectivorous mammals of the area include shrews and bat species. More omnivorous small mammals include squirrels, kangaroo rats, and several species of mice.

2.0 Tribal Life

Twenty-three or more tribes were included in the Northern Paiutes of Nevada, California, Idaho and Oregon by Wheat (1967). The tribes were often known by the food they most commonly used (e.g., Wheat, 1967; Fowler, 1989; Hittman, 1990 and Fowler, 1990).

Appendix D: Traditional Tribal Lifeways Background Information

Tribes in the northwestern Nevada include Trout-eaters or agaidikaa[1] (located around Walker Lake for the Lahontan cutthroat trout), Cui-ui-eaters or kuyuidikaa (located near Pyramid Lake for the Cui-ui fish) and Cattail-eaters or toidikaa (located around Carson Lake). Interpersed with these tribes were the ground-squirrel-eaters (kibidikaa), the Jackrabbit-eaters (kammidikaa), the Sucker-eaters (pakwidikaa) and others such as the Grass-nut eaters, or Taboosi-eaters, south of Yerington and the Fish-eaters south of Walter Lake. (Wheat, 1967) summarized the relationship between the tribes and their environment with the following description:

> "Bleak and cold, or hot and dry though the Great Basin was, the Indians found a livelihood there because they were wise in its ways and used every resource advantageously."
>
> "They learned to build shelters from whatever material was available, protecting themselves in their seasonal wanderings from the extremes of client. They recognized and used small bits of food such as rodents, insects, roots, and tiny seeds which were rejected by the starving pioneers. They raised their children and grew to an old age. At times they even danced and sang."

The Paiute Indians had no tools or pottery, but are famous for intricate basketry used for many purposes (Wheat, 1967). Grass-woven bowls and baskets came in a variety of colors and designs and were used on a daily basis (Hittman 1990). Tribes in the area did not farm because traditional crops (e.g., corn and beans) could not be readily grown and killing frosts occurred late in the spring and early in the fall (Wheat, 1967). As a result, the tribes relocated to accommodate seasonal changes in the food supply, as described below.

In the winter, shelters were built in small family groups near caches of food such as the pinions for the pine nuts or near the river close to the bank for fishing (Wheat 1967; Fowler 1989). In the spring, the shelters were moved further from the river due to flooding (Fowler 1989). In the summer, people dispersed in search of grasses and seeds. Men would move the shelters closer to areas with seed and go back to the river to fish (Fowler 1967). In the late summer and fall, people would move to the higher lands with

[1] The spelling of tribal names is an approximation.

pinion trees to collect pine nuts and to hunt (Fowler 1967). The tribes would also make long forays into other areas for specific foods (e.g., if a tribe heard that a berry was ripe in a valley fifty miles away, members would travel to gather the berries [Wheat, 1967]).

The Paiute Indians were resourceful and were able to use many potential sources of food with little or no wastage. All parts of animals or plants that were edible were used (Fowler, 1989; Wheat, 1967). Vegetable food (seeds and roots) and fish were reported as the most important sources of food although it was also reported the men spent a large amount of time hunting large and small game (Fowler, 1989). According to Hittman 1990, Yerington Paiutes commonly ate jackrabbit, deer, pine nut soup and buckberries as part of their diet. The collection of animals and plants also involved many cultural events. For example, the harvesting of pine nuts, and rabbit and antelope drives were events laced with ceremony and traditional practices (Fowler, 1989; Wheat, 1967). The following is a brief description of the animals and plants that were used for food, clothes, shelter, tools and spiritual practices, including medicinal rituals.

3.0 Animals Used by the Paiute Indians

Much of tribal life centered around the lakes, rivers and marshes where fish were abundant. Some of the interviewees reported eating fish every day, and said that there were many days without meat (Fowler, 1989). Fishing occurred all year round including winter through the ice (Fowler ,1989):

> "Fish were more important in the economy then meat. Fishing was especially important when the wild seed failed due to lack of rainfall. Even when the women were away from the river gathering seeds or pinenut, the men came back to fish. They fished almost everyday in the winter and spring and quite a bit in the summer and fall."

In the late winter and spring, shiners, Tahoe sucker, Cui-ui and cutthroat trout would begin spawning runs up the Truckee and Walker Rivers. Paiute from all tribes would come to join Trout-eaters and Cui-ui eaters to catch fish (Fowler, 1989; Wheat, 1967).

The marshes were also a source of water fowl and eggs. The men made raft-like boats of tule tied in bundles which they used to search for eggs, to hunt for ducks, to fish and to travel (Fowler, 1990). Ducks were hunted with decoys and nets (Fowler, 1989; Wheat, 1967). Water fowl were valued for meat, feathers and skin. Swan feathers were prized for pillows for infant and the skin of mud hens or coots was used for cordage and woven into blankets. Birds of many kinds were also sources of food except the magpie and crow because these birds ate dead meat (carrion) (Wheat 1967).

Eagle feathers were very important for spiritual leaders, such as medicine men and shamans during healing rituals. One of the most notable uses of an eagle feather by a Paiute Indian was by a Prophet named Wovoka (Jack Wilson), said to be part of the Yerington Paiute Tribe. Wovoka founded the 1890 Ghost Dance movement in the Mason and Smith valleys in Nevada (Hittman 1990). An observer to one of these healing rituals described the following (Hittman 1990):

> "He put the eagle feather near where the wound is, in here [under the arm]. You know how the feather is. You can see the blood was coming through there [the feather's quill]. That he was getting out his feather in the wound and the blood was drawn out….He said 'She has chipped a bone…' Said he was going to take it out. That piece of bone was about as big as a sliver…Then he put it in the palm of his hand and rubbed his hands together. He sang one of his medicine songs. When he opened his hands the sliver of bone had disappeared. My sister got well and in two weeks she was walking again."

The Northern Paiute men also spent a lot of their time hunting. Small animals used for food included rabbits, prairie dogs (both common sources of food), ground hogs, wood rats, badgers, weasels, raccoons, muskrats, porcupines, chipmunks, mice and wildcats. Skunks, foxes, coyotes and wolves were killed for the skins but were not eaten because the meat did not taste good (Fowler, 1989). Rabbits were an important source of meat and were hunted by individuals with a variety of methods, and were also hunted in the fall in large drives with the aid of nets (Wheat, 1967; Fowler, 1989). A robe or blanket of rabbit skins was considered to be "ordinary Paiute dress" and was worn by men and

women of the Yerington Paiute tribe (Hittman 1990). Rabbit skin blankets were also given as gifts from the Paiute to others, including non-tribal visitors (Hittman 1990). Rabbit drives were a cultural event involving many people and traditions (Wheat, 1967).

Large game used for meat included deer, antelope, mountain sheep and occasionally bear, which were typically hunted during the period from the fall through the spring (Fowler, 1989). Deer were most plentiful in the area that is now designated as Washoe Country than anywhere else. Female deer were not hunted from May through October, and no deer were hunted during breeding season (Fowler, 1989). Antelope were an important source of food during the spring and winter. One common method of hunting was to drive groups of antelope into corrals (Fowler, 1989). Tribes from other areas would often send support during the antelope hunts. Mountain sheep and bear were eaten by Paiute tribe members on a less frequent basis (Fowler, 1989). The fact that larger game was, overall, a limited resource is also supported by the fact that many clothes, especially for women, were made from grasses and that clothes made from animal skins were not available for everyone (Fowler, 1967). Hides from deer, for example, that were used for clothing underwent a tanning process that involved using animal brains as the tanning solution (Wheat 1967). In today's culture, cow brains are most commonly used. After soaking overnight in a brain slurry the hide went through a smoking procedure that required strict attention, so as to achieve the "proper shade of tan" (Wheat 1967). When animal hides were not available for clothing, it was customary to make pants and shirts out of sagebrush bark. The use of sagebrush clothing is not common today, except when used in parades and for exhibitions (Wheat 1967).

4.0 Plants Used by Paiute Indians

The tribes made extensive use of plants for food, medicine, fiber, dyes and other purposes. Moerman (2006) lists hundreds of plants that were used by the Paiutes in multiple ways. For example, there were 254 known uses for the broadleaf cattail (*Typha latifolia*) and 366 known uses of yarrow (*Achillea milleflium*), both important plants to the Paiute Indians in northern Nevada (Fowler 1989; Moerman, 2006; Pelligrini 1994;

Wheat 1967). A summary of the uses of two key plants: cattails (*Typha latifolia)* and Pinyon Trees (*Pinus monphylla*) is provided below. Brief descriptions of additional plants are also provided that represent different categories of foods and demonstrate the variety of uses that the Paiutes made of local flora. These include seed grasses, such as Indian Rice Grass (*Oryzopsis hymenoides* Roemer and Schulter) and Nut Grass (*Cyperus esculentus and rotundus*), berries (e.g. Chokeberry or *Prunus virgiana* L.), plants mainly used for medicinal purposes (e.g., (Big Sagebrush or *Artemesia tridentate* Nutt.), and Buckwheat such as Curly Dock or Indian rhubarb (*Rumex crispus* L), Pursh or Veiny Dock (*Rumex venosus*), and plants that were medicinal as well as used for implements and shelter (e.g., Willow or *Salix exigua* Nutt.). Wild tobacco, for example, was used commonly by shamans, or medicine men, during cures and other rituals (Hittman 1990). A comprehensive assessment of the plants and their uses by the Paiute Indians can be found in Moerman (2006) and supplemental information is found in the other references cited in this Appendix.

4.1 Cattails (*Typha latifolia)*

Cattails were an important source of food to the Paiutes, such that there was a tribe located around the Carson River known as the Cattail-eaters (Wheat 1967). One of the first new plants to appear in the spring, cattail shoots were peeled and eaten raw or cooked like a vegetable (Wheat 1967). Cattail seeds, roots, and pollen were ground into flour that was used to make mush and cakes (Moerman, 2006; Pelligrini, 1994; Wheat, 1967). Cattails were also a important source of building materials (e.g., fiber extracted from cattails was used for binding the tulle grass for exterior shingles), making duck decoys, mats, rugs, bedding, and sandals (Moerman, 2006; Pelligrini, 1994; Wheat, 1967). Train (1974) reported that the young flowering heads of the cattail were sometimes used to stop diarrhea.

4.2 Pinyon Trees (*Pinus monphylla*)

Single-leaf pinions are scrubby round trees and the nuts are about the size of an olive pit, and pine nuts were virtually the only nut used by the Indians of Western Nevada. (Wheat, 1967):

> "For the Indians of Nevada, pine nut time was the most important time of the year. Religion combined with play, work with happiness".

Pine nut collection began in August with an all night prayer dance and would include many social activities such as a highly complicated gambling game that could last for days. Everyone participated in the harvest that involved collecting, cleaning roasting, winnowing and grinding. The pine nuts were roasted twice by juggling the nuts in a flat basket with hot coals in order to get out all the hulls and chaff (Wheat, 1967). Unhulled seeds were strung on cord, dried and stored in sacks for food during the winter months, and a form of ice cream from pine nut dough by specific Paiute tribes (Moerman, 2006).

> "Pinenuts are a highly concentrated food, rich in protein. The Indians ate them raw, roasted or made into soup." (Wheat, 1967)

The resin from the pinyon trees was also used to cure various ailments, either by direct ingestion, drinking it as a tea, making it into a chewing gum or as a poultice for sore muscles. Ailments treated by the pine nut included sore throat, nausea, diarrhea, rheumatism, sores, cuts and swellings, tuberculosis, gonorrhea and other venereal diseases (Moerman, 2006; Train, et al., 1974).

4.3 Indian Rice Grass *Oryzopsis hymenoides* (Roemer and Schulter) Ricker

The Paiutes of northern Nevada gathered the tiny black seeds from this grass in July before the seeds fell to the ground (Fowler, 1989; Wheat, 1967). These seeds are very nutritious and, along with pine nuts, were an important food source during the winter months (Pellegrini, 1994). Indian grass is an important plant in the Great Basin as a source of food for domestic livestock, especially during the winter months when its well cured stems provide valuable nutrition (Pellegrini, 1994).

4.4 NutGrass (*Cyperus esculentus and rotundus*)

Parks reported that the nutgrass roots were one of the staples at Walker Lake (Fowler, 1989). Wheat (1967) reported that the seeds that fell into the water were harvested in the fall, and ground and boiled to make gruel. Moerman (2006) lists nutgrass as only important to the Paiute Indians among tribes in the United States, and states that some Indian nations also used nutgrass as a ceremonial emetic, cold and cough remedy, remedy for snake bites and stimulant for horses. Train et. al. (1974) reported a Paiute family that combined Indian or Coyote Tobacco (*Nicotiana attenuate*) leaves with roots that he thought were nutgrass to treat foot infections.

4.5 Chokeberry (*Prunus virgiana* L.)

The Paiute Indians ate many types of berries, and the chokeberry is reported to be one of the favorites (Trejo, 1985). Berries were gathered in the fall and eaten raw, cooked into jelly or pudding or dried (Trejo, 1985; USDA, 2008). Trejo (1985) reported that the berries were crushed into a pulp, shaped into flat patties and sun-dried, and states that these dried berry cakes would last for three to five years. The seeds were also used for jewelry and the wood for implements such as arrow shafts (USDA, 2008). Medicinal uses included poultices for burns and a treatment for dysentery (Moerman, 2006). Train et al. (1974) reported that tea made from the bark was used for colds and the bark was sometimes smoked to relieve headaches.

4.6 Big Sagebrush (*Artemesia tridentate* Nutt.)

Big Sagebrush has been listed as the most abundant shrub in North America, with 266 uses of this plant, principally for medicinal purposes (Pellegrini, 1994; Moerman, 2006). Many tribal members burned sagebrush during purification rituals, to designate meeting sites, or after the death of a fellow tribal member (Pellegrini 1994). Sagebrush bark was used to make rope and clothing (e.g., moccasins and skirts; Pellegrini 1994). The most common medicinal uses were associated with treatment for colds and coughs as teas, poultices and in whole pieces (Train, et al., 1974). Whole leaves were used in the nose for congestion (Moerman, 2006). A tea made of boiled leaves with a pinch of salt

administered each time a patient coughed was considered a reliable cure for pneumonia, and a strong tea made from sagebrush was beneficial as a laxative (Train, et al., 1974). A poultice of ground leaves and tobacco was used on children with fevers (Moerman, 2006) Other uses included baby powder and palliatives for headache, stomach ache, as an antiseptic and for tuberculosis (Moerman, 2006; Train, et al., 1974).

4.7 Buckwheat – Curly Dock or Indian rhubarb (*Rumex crispus* L) Pursh or Veiny Dock (*Rumex venosus*)

For rheumatic swellings, bruises, burns and to treat pain, the most common use of buckwheat was to crush the raw root and apply it as a poultice, and the poultice was often heated or boiled before being applied (Train, et al., 1974; Sweet, 1962). A tea was prepared for a variety of ailments such as liver disorders, rheumatism, pneumonia, influenza, coughs and colds. Dock was also combined with pitch from single leaf pinyon (*Pinus monophylla*) and eaten (Train, et al., 1974; Fowler, 1992). The root was also powdered, dried and placed on a moist cloth to make a poultice to treat skin problems and to stop itching (Pellegrini 1994). The leaves were also used as a pot herb to treat scurvy, as an astringent and, sometimes, an orange or yellow dye was made from the inner bark of Rumex roots (Pellegrini, 1994).

4.8 Willow (*Salix exigua* Nutt.)

All species of willow including the common Coyote willow were important plants to the indigenous tribes of Nevada, who used it to weave some of the finest baskets produced anywhere in North America, as well as for use in frames for houses, bow, arrows and other implements (Pellegrini, 1994). Coyote willow produces salicin, a chemical relative of aspirin which could be related to medicinal properties, and the most common medicinal use was in the treatment of influenza, venereal disease and dysentery (Pellegrini, 1994; Train et al., 1974).

5.0 Other Materials

The Paiute used materials from the earth as part of their rituals, customs and healing practices. As part of the mourning customs, the Paiutes would "…lay in the dust for five days" and blacken their faces as well (Hittman 1990). Among the Yerington Paiutes red and white mineral paints were used during the Ghost Dance lead by Wovoka: "…dancers painted their faces and part of their bodies with simple bars and dots in red and white mineral pigments" (Hittman 1990). The red paint (*pesape)*, or ochra, was said to come from Mount Grant, a sacred mountain according to the Yerington Paiutes (Hittman 1990). However, its true origin is only speculated. This red paint was used for many different things, including rattlesnake repellent when used to demarcate an area that was considered off limits to the snakes (Hittman 1990). Hittman describes an example of when the red paint was used for medicinal purposes (Hittman 1990):

> "[Wovoka] put that paint around him [gunshot wound victim] and Wavoka [sic] said the swelling won't go past that. And he took the buckshot out of him. He didn't have to cut to get them out, either."

The red and white paints were also given as gifts to other tribal members and to non-tribal members as tokens of goodwill (Hittman 1990).

6.0 References

Fowler, Catherine, 1989, *Willard Z. Park's Ethnographic Notes on the Northern Paiute of Western Nevada 1933-1940*, Salt Lake City: University of Utah Press.

Fowler, Catherine, 1990, *Tule Technology: Northern Paiute Uses of Marsh Resources in Western Nevada*, Washington, D.C.: Smithsonian Institution Press.

Hittman, Michael, 1990, *Wovoka and the Ghost Dance,* University of Nebraska Press, Lincoln and London.

Moerman, Daniel, 2006, *Native American Ethnobotany*, Timber Press, Portland, Oregon.

Pellegrini, Steven, 1994, *Historical Uses and Botanical Descriptions of Thirty Plants Important to Great Basin Indians*, Yerington, NV.

Train, Percy, James R. Heinrichs, and W. Andrew Archer, 1974, *Medicinal Uses of Plants by Indian Tribes of Nevada*, in *Paiute Indians IV*, D.A. Horr, ed. Pp. 53-257. New York, NY: Garland Publishing.

Trejo, Judy, 1985, *Medicinal and edible plants of the Paiute Indians*, Northwest Folklore 4(1):3-12.

USDA, 2008, *Native Uses of Native Plants in the Sierra Nevada Mountains and Foothills of California and Nevada*, U.S. Department of Agriculture Natural Resources Conservation Service, California and Nevada.

ftp://ftp-fc.sc.egov.usda.gov/CA/news/Publications/general/NativePlants04.pdf

Wheat, Margaret, 1967, *Survival Arts of the Paiute Indians*, University of Nevada Press. Reno, Nevada.